REMARKS/ARGUMENTS

The title of the application has been amended to conform to the current claims. No new matter has been added by the amendment.

Claims 1-4, 6, 10, 22 and 24 are pending in the present application. Claim 1 was amended, claim 23 was canceled, and claim 24 was added. Support for the claim amendments and the new claim can be found in the specification, for example, on page 16, line 28 to page 17, line 8 and in previous claims. Reconsideration of the claims is respectfully requested in view of the above amendments and the following comments.

In this Amendment, Applicants have amended claim 1 and canceled claim 23 from further consideration in this application. Applicants do not concede that the subject matter encompassed by claims 1 and 23 prior to this Amendment is not patentable over the art cited by the Examiner. Applicants have amended claim 1 and canceled claim 23 solely to facilitate expeditious prosecution of the application. Applicants respectfully reserve the right to pursue claims, including the subject matter encompassed by claims 1 and 23 prior to this Amendment, and additional claims in one or more continuing patent applications.

I. 35 U.S.C. § 103, Obviousness

The Examiner has finally rejected claims 1-2, 6, 10, and 23 under 35 U.S.C. § 103 as being unpatentable over Sapashe et al., U.S. Patent Application Publication No. 2005/0059369 (hereinafter "Sapashe") in view of Cranfill et al., U.S. Patent No. 7, 242,784 (hereinafter "Cranfill"). This rejection is respectfully traversed.

In finally rejecting the claims, the Examiner states with respect to claim 1:

> Re claim 1, Sapashe et al. disclose a method for intelligent audio output control, the method comprising: periodically receiving values for each input parameters of a set of parameters, wherein each input parameters affects environmental noise (fig.2 wt (214)/external environment noise); and receiving stored historical data, wherein the stored historical data comprises stored values for the set of input parameters and a stored audio output parameter value associated with the stored values for each input of the set of input parameters, wherein the stored historical data comprises a plurality of data values, wherein each data value comprising a stored value for each input parameter for the set of input parameters and the audio output parameter value associated with the stored value for each input

parameter of the set of input parameters; responsive to a value for one or more of the periodically received values for each input parameter changing, predicting a value for an audio output parameter of an audio system based on the received values for each input parameter of the set of input parameters and the stored historical data and adjusting the audio output parameter for the audio system using the predicted value for the audio output parameter (fig.1-2; par[0012-0013,0008,0010J/output based on input and stored historical data and sample periodically) .

While, Sapasha et al. disclose of the above with input data corresponding with output data, However, He fail to disclose of the specific wherein the step of predicting a value for an audio output parameter comprises one of a receiving data points and performing statistical analysis on the plurality of data points to predict the value for the audio output parameter; and identifying a closest data point within the plurality of data points and setting the predicted value for the audio output parameter to an audio output parameter value of the closest data point. But, Cranfill disclose of the dynamic control gain signal wherein the step of predicting a value for an audio output parameter comprises one of the receiving data points and performing statistical analysis on the plurality of data points to predict the value for the audio output parameter; and identifying a closest data point within the plurality of data points and setting the predicted value for the audio output parameter to an audio output parameter value of the closest data point (fig. 1 wt (memory), fig. 4-5, col.3 line 29-40, col.5 line 35-65/statistical interpolation with linear for input and output data point with closest data points) for the purpose of dynamically improving the audio gain so low input level could be heard. Thus, taking the combined teaching of Sapashe et al. and Cranfill as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Sapashe et al. by incorporating the wherein the step of predicting a value for an audio output parameter comprises one of the receiving data points and performing statistical analysis on the plurality of data points to predict the value for the audio output parameter; and identifying a closest data point within the plurality of data points and setting the predicted value for the audio output parameter to an audio output parameter value of the closest data point for the purpose of dynamically improving the audio gain so low input level could be heard.

Final Office Action dated September 18, 2008, pp. 3-5.

Claim 1 as amended herein is as follows:

1. A method for intelligent audio output control, the method comprising:

periodically receiving values for each input parameter of a set of input parameters, wherein each input parameter affects environmental noise;

receiving stored historical data, wherein the stored historical data comprises stored values for each input parameter of the set of input parameters and a plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters, wherein each stored audio output parameter value of the plurality of stored audio output parameter values is set by a different user of a plurality of users, and wherein the stored historical data comprises a plurality of data points, each data point comprising a stored value for each input parameter of the set of input parameters and each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters;

identifying a user of the plurality of users to form an identified user;

responsive to a value for one or more of the periodically received values for each input parameter changing, predicting a value for an audio output parameter of an audio system for the identified user based on the received values for each input parameter of the set of input parameters and historical data of the stored historical data corresponding to the identified user, wherein the historical data corresponding to the identified user comprises a stored audio output parameter value of the plurality of stored audio output parameter values set by the identified user; and

adjusting the audio output parameter for the audio system using the predicted value for the audio output parameter for the identified user, wherein predicting a value for an audio output parameter comprises one of receiving the plurality of data points and performing statistical analysis on the plurality of data points to predict the value for the audio output parameter for the identified user; and identifying a closest data point within the plurality of data points and setting the predicted value for the audio output parameter for the identified user to an audio output parameter value of the closest data point.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka,* 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are… determined; differences between the prior art and the claims at issue are… ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the

background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). "*Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.* Id. (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006))."

In the present case, the Examiner has failed to establish a *prima facie* case of obviousness because neither Sapashe, nor Cranfill nor Sapashe in view of Cranfill teaches or suggests all the claim limitations. With respect to claim 1, for example, neither Sapashe, nor Cranfill nor Sapashe in view of Cranfill teaches or suggests "receiving stored historical data, wherein the stored historical data comprises stored values for each input parameter of the set of input parameters and a plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters, wherein each stored audio output parameter value of the plurality of stored audio output parameter values is set by a different user of a plurality of users, and wherein the stored historical data comprises a plurality of data points, each data point comprising a stored value for each input parameter of the set of input parameters and each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters", "identifying a user of the plurality of users to form an identified user", or "responsive to a value for one or more of the periodically received values for each input parameter changing, predicting a value for an audio output parameter of an audio system for the identified user based on the received values for each input parameter of the set of input parameters and historical data of the stored historical data corresponding to the identified user, wherein the historical data corresponding to the identified user comprises a stored audio output parameter value of the plurality of stored audio output parameter values set by the identified user."

Sapashe is directed to a mechanism for automatically adjusting the volume of a communications device to compensate for changes in background noise. A user preference for a particular volume relative to a particular amount of background noise is stored and used as a basis for adjusting the volume when background noise changes.

In rejecting claim 1, the Examiner asserts that Sapashe discloses all the features recited in the claim except for "wherein predicting a value for an audio output parameter comprises one of

receiving the plurality of data points and performing statistical analysis on the plurality of data points to predict the value for the audio output parameter; and identifying a closest data point within the plurality of data points and setting the predicted value for the audio output parameter to an audio output parameter value of the closest data point." Applicants respectfully disagree. Sapashe simply teaches monitoring environmental noise with a microphone and adjusting a sound volume to compensate for changes in environmental noise, and also does not teach or suggest other features of amended claim 1.

For example, Applicants respectfully submit that Sapashe does not disclose or suggest "receiving stored historical data, wherein the stored historical data comprises stored values for each input parameter of the set of input parameters and a plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters, wherein each stored audio output parameter value of the plurality of stored audio output parameter values is set by a different user of a plurality of users, and wherein the stored historical data comprises a plurality of data points, each data point comprising a stored value for each input parameter of the set of input parameters and each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters" as now recited in claim 1. In this regard, the present invention recognizes that background noise may affect different users differently. One user may be affected by a particular level of background noise to a greater extent than another. The present invention provides for storing audio output parameter values that are separately set by each user of a plurality of users, so that an audio output parameter can be changed differently for the different users. Neither Sapashe nor Cranfill discloses or suggests such a feature and claim 1 is not obvious over the references for this reason.

In addition, Applicants respectfully disagree that Sapashe discloses or suggests "wherein the stored historical data comprises a plurality of data points, each data point comprising a stored value for each input parameter of the set of input parameters and each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters" as recited in amended claim 1. Paragraphs [0012]-[0013], [0008] and [0010] of Sapashe, referred to by the Examiner in rejecting claim 1, describes comparing background audio levels with a stored current background

level to determine whether a change in background level occurs, and adjusting a volume level of a communication device when adjustment is needed.

Neither in the paragraphs referred to by the Examiner nor elsewhere in the reference, however, does Sapashe disclose or suggest that stored historical data comprises a plurality of data points, each data point comprising a stored value for each input parameter of the set of input parameters and each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters", as recited in claim 1. The only historical data in Sapashe is a volume set by a user in accordance with a particular background that is used to adjust the sound volume. The reference does not disclose or suggest a plurality of data points each comprising a stored value for each input parameter of a set of input parameters, or that each audio output parameter value of the plurality of stored audio output parameter values associated with the stored values for each input parameter of the set of input parameters.

Therefore, claim 1 is not obvious over the cited references for this reason as well.

Yet further, claim 1 now also recites "identifying a user of the plurality of users." As discussed above, the references do not disclose or suggest receiving a plurality of stored audio output parameter values wherein each stored audio output parameter value of the plurality of stored audio output parameter values is set by a different user of a plurality of users", and would have no reason to identify a user of the plurality of users as now also recited in claim 1.

Claim 1, accordingly, is not obvious over the cited references for this reason also.

Claim 1 as amended further recites "responsive to a value for one or more of the periodically received values for each input parameter changing, predicting a value for an audio output parameter of an audio system for the identified user based on the received values for each input parameter of the set of input parameters and historical data of the stored historical data corresponding to the identified user, wherein the historical data corresponding to the identified user comprises a stored audio output parameter value of the plurality of stored audio output parameter values set by the identified user." Neither Sapashe nor Cranfill nor their combination teaches or suggests predicting a value for an audio output parameter for an identified user based on historical data that comprises a stored audio output parameter value set by the identified user, and claim 1 patentably distinguishes over the cited references for this reason, as well.

For at least all the above reasons, the Examiner has not established a *prima facie* case of obviousness in rejecting claim 1, and claim 1 patentably distinguishes over the cited references in its present form.

Claims 2, 6 and 10 depend from and further restrict claim 1, and also patentably distinguish over Sapashe in view of Cranfill, at least by virtue of their dependency. Claim 23 has been canceled.

Therefore, the rejection of claims 1-2, 6, 10, and 23 under 35 U.S.C. § 103 has been overcome.

II. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claim 3 under 35 U.S.C. § 103 as being unpatentable over Sapashe and Cranfill and further in view of Henderson et al., U.S. Patent Application Publication No. 2004/0042624 (hereinafter "Henderson"). This rejection is respectfully traversed.

In rejecting claim 3, the Examiner states:

> Re claim 3, the method of claim 1 with the input parameters, but the combined teaching of Sapashe et al. and Cranfill as a whole, fail to disclose of the specific wherein the set of input parameters includes at least one of vehicle speed, whether the vehicle window is opened or closed or convertible top is up or down. But, Henderson et al. disclose of a sound system wherein such having input parameters includes at least one of vehicle speed, whether the vehicle window is opened or closed or convertible top is up or down (par [0006, 0009]) for purpose of providing an enhanced of audio quality output dependent on the environmental condition of the car. Thus, taking the combined teaching of Sapashe et al. and Cranfill and Henderson et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Sapashe et al. and Cranfill as a whole, with the having input parameters includes at least one of vehicle speed, whether the vehicle window is opened or closed or convertible top is up or down for purpose of providing an enhanced of audio quality output dependent on the environmental condition of the car.

Final Office Action dated September 18, 2008, pp. 6-7.

Claim 3 depends from and further restricts claim 1. Henderson is cited as disclosing monitoring input parameters such as whether a vehicle window is up or down or whether a convertible top is opened or closed to provide an audio output dependent on the environmental

condition of a vehicle. Henderson does not supply the deficiencies in Sapashe and Cranfill as discussed in detail above with respect to claim 1. Claim 3, accordingly, patentably distinguishes over the cited art, at least by virtue of its dependency.

Therefore, the rejection of claim 3 under 35 U.S.C. § 103 has been overcome.

III. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claim 4 under 35 U.S.C. § 103 as being unpatentable over Sapashe and Cranfill et al., U.S. Patent No. 7,242,784 and further in view of Kitamura et al., U.S. Patent No. 6,704,421 (hereinafter "Kimura"). This rejection is respectfully traversed.

In rejecting claim 4, the Examiner states:

> Re claim 4, the method of claim 1 with the data input and sensors (fig. 1-2). But, the combined teaching of Sapashe et al. and Cranfill as a whole, fail to disclose of the limitation wherein the set of input parameters includes audio type, wherein the audio type comprise one of a song type, talking, and a commercial. However, Kitamura et al. disclose of a sound output system wherein input parameters includes audio type, wherein the audio type comprise one of a song type, talking, and a commercial (col.3 line 1-10; col.7 line 55-67) for purpose of providing an equalization which accommodate variation of audio formats. Thus, taking the combined teaching of Sapashe et al. and Cranfill and Kitamura et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Sapashe et al. and Cranfill as a whole, wherein input parameters includes audio type, wherein the audio type comprise one of a song type, talking, and a commercial for purpose of providing an equalization which accommodate variation of audio formats.

Final Office Action dated September 18, 2008, pp. 7-8.

Claim 4 depends from and further restricts claim 1. Kitamura is cited as disclosing an audio system that accommodates variations of audio types (song, talking, etc.). Kitamura does not supply the deficiencies in Sapashe and Cranfill as discussed in detail above with respect to claim 1. Claim 4, accordingly, patentably distinguishes over the cited art, at least by virtue of its dependency.

Therefore, the rejection of claim 4 under 35 U.S.C. § 103 has been overcome.

IV. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claim 22 under 35 U.S.C. § 103 as being unpatentable over Sapashe and Cranfill and further in view of Banno, U.S. Patent No. 6,760,453 (hereinafter "Banno"). This rejection is respectfully traversed.

In finally rejecting claim 22, the Examiner states:

> Re claim 22, the combined teaching of Sapashe et al. and Cranfill as a whole, disclose of the method of claim 1 and wherein periodically receiving values for each input parameter of a set of input parameter. But, the combined teaching of Sapashe et al. and Cranfill as a whole, fail to disclose of the specific wherein input comprises periodically receiving values for each input every second. But, Banno disclose of a system of sampling input signal wherein such having the specific wherein comprises periodically receiving values for each input every second (fig. 1, 3, col.8 line 20-29) for purpose of receiving instantaneous output level signal dependent on the input level detecting. thus, taking the combined teaching of Sapashe et al. and Cranfill and Banno as a whole, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Sapashe et al. and Cranfill as a whole, with the specific wherein comprises periodically receiving values for each input every second for purpose of receiving instantaneous output level signal dependent on the input level detecting.

Final Office Action dated September 18, 2008, pp. 8-9.

Claim 22 depends from and further restricts claim 1. Banno is cited as disclosing receiving input signals every second. Banno does not supply the deficiencies in Sapashe and Cranfill as discussed in detail above with respect to claim 1. Claim 22, accordingly, patentably distinguishes over the cited art, at least by virtue of its dependency.

Therefore, the rejection of claim 22 under 35 U.S.C. § 103 has been overcome.

V. Claim 24

New claim 24 has been added to more fully protect Applicants' invention. Claim 24 depends from claim 1 and recites that the plurality of users are a plurality of drivers of a vehicle, and that identifying a user of the plurality of users comprises identifying the user by one of a keychain remote, a seat position preset, or a voice identification. As discussed above, none of the cited references discloses or suggests storing audio output parameter values that are separately

set by each user of a plurality of users, or identifying a user of the plurality of users, and the references also do not disclose or suggest identifying a user of the plurality of users by one of the mechanisms recited in claim 24. Claim 24, accordingly, patentably distinguishes over the cited art in its own right as well as by virtue of its dependency.

VI. Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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